DEPARTMENT OF FORESTRY AND FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
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FM8

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Re: Alcohol Based Sanitizing Dispensers

Recently, my office has been discussing the issue of the use of alcohol-based hand sanitizing dispensers in fire-resistive corridors of hospitals. As you are aware, the State Fire Marshal's Code Interpretation No. 04-006 provides the opinion that the use of alcohol-based hand sanitizing dispensers in fire-resistive corridors are prohibited.

The basis for this code interpretation came from an opinion from the Department of Health Service's Life Safety Code Unit, which was developed in conjunction with the Joint Accreditation of Healthcare Organizations (JCAHO). It was determined that because there was a lack of information as to what amount of quantities would present a hazard, it was prudent to prohibit the use of this product in fire-resistive corridors. As such, the lack of a nationally recognized standard was problematic to code enforcers, thus prompting officials to rule against the installation of alcohol-based hand sanitizing dispensers in fire-resistive corridors.

However, because of the necessity of controlling infectious diseases in hospital patient areas, the Centers for Disease Control and Prevention (CDC) recommends the use of alcohol-based hand sanitizing dispensers in convenient locations of patient care areas. In addressing the fire hazard of introducing alcohol-based materials in fire-resistive corridors, a fire modeling project was conducted, which determined that within specified parameters and conditions, the use of these materials in fire-resistive corridors is acceptable.

As a result, proposed standards for alcohol-based hand sanitizing dispensers are currently being considered by both the National Fire Protection Association (NFPA) and the International Code Council (ICC). Thus far, these proposed standards have been successful in the model code approval processes of both the NFPA and ICC. Once approved, there will be two nationally recognized standards for the installation of alcohol-based hand sanitizing dispensers available for consideration for adoption by state and local fire officials.

Recognizing the immediate need to provide for the control of infectious diseases in hospitals, this Office has developed a proposed standard for alcohol-based hand sanitizing dispensers for use in California. Our proposed standard will resemble both the NFPA and the ICC proposed standards; however our proposed standard will be somewhat more restrictive, thus providing for a higher level of protection in fire-resistive corridors of hospitals. I intend to introduce these proposed standards as an emergency regulation so

that its effect will become immediate upon compliance with the appropriate procedures of the California Administrative Procedures Act (APA).

A copy of our proposed standard for alcohol-based hand sanitizing dispensers is attached for your review. If you should have any questions or comments, please feel free to contact me.

Sincerely,

RUBEN GRIJALVA
State Fire Marshal

State Fire Marshal
Proposes Changes to
Title 19 Regulations
Exits, Aisles, Ramps, Corridors and Passageways

Title 19, Division 1, Chapter 1, Subchapter 1, Article 3,

Section 3.11 Exits, Aisles, Ramps, Corridors, and Passageways.

(a) No person shall install, place or permit the installation or placement of any bed, chair, equipment, concession, turnstile, ticket office or anything whatsoever, in any manner which would block or obstruct the required width of any exit.

(b) No person shall install, place or permit the installation or placement of any combustible material or equipment in or exposed to any exit.

Exceptions:

(1) Furniture or equipment constructed of wood or other material of similar combustibility may be permitted in an exit or exposed to an exit when approved by the enforcing agency.

(2) When approved by the enforcing agency, combustible materials may be permitted in exit foyers and lobbies.

(c) No person shall install, place or permit the installation or placement of any storage material of any kind in any exit regardless of the required width of such exit.

Exception: Personal material located in metal lockers in Groups B and E Occupancies as defined in Part 2, Title 23, CCR.

(d) Aisle shall not be occupied by any person for whom seating is not available.

(e) Alcohol-based hand rubs classified as Class I or Class II liquids may be located in corridors of health care occupancies when in accordance with the following:

(1) The minimum corridor width shall be 72inches.

(2) The maximum capacity o each dispenser shall be 41oz.

(3) The minimum horizontal separation between dispensers shall be 48 inches.

(4) The dispensers shall not be installed over or directly adjacent to an electrical receptacle, switch, appliance, device or other ignition source. The wall space between the dispenser and the floor shall remain clear and unobstructed.

(5) Dispensers shall be mounted so that the bottom of the dispenser is a minimum of 42 inches and a maximum of 48 inches above the finished floor.

(6) Dispensers shall not release their contents except when the dispenser is manually activated.

(7) Dispensers installed in carpeted corridors shall be permitted only if the smoke compartment or fire area is equipped throughout with an approved automatic sprinkler system in accordance with the California Building Code.

(8) Not more than an aggregate10gal. of alcohol-based hand rub solution shall be in use in a single smoke compartment outside of a storage cabinet.

(9) Storage of quantities greater than 5gal. in a single smoke compartment shall meet the requirements of the California Fire Code

INFORMATIVE DIGEST

Referenced Authority, Summary of Existing Law

The State Fire Marshal is proposing to amend Title 19, California Administrative Code, Section 3.11 by adding Subsection (e) addressing the use of alcohol-based hand rubs for use in select licensed facilities. This action is taken under the authority of the following Health and Safety Code Sections: §1597.6, for large family day care facilities; 13108, for State-occupied facilities which include institutions; 13133, for residential facilities and residential facilities for the elderly; 13143, for any asylum, jail, mental hospital, hospital, sanitarium, home for the aged, children's nursery, children's home; 13143.6, for certified family-care homes, out-of-home placement facilities, halfway houses, drug and /or alcohol rehabilitation facilities and an building or structure used or intended for use as a home or institution for the housing of any person of any age when such person is referred to or placed within such home or institution for protective social care and supervision services by any governmental agency.

Policy Statement Overview

Code change proposals addressing the use of these products were approved for both model building codes used in the United States. Application of these regulations adopted through the model code process, could delay actual implementation for several years. The State Fire Marshal and several health care providers agree that the need for the use of these products for infection control is immediate, justifying this emergency action and that the regulations adequately address the life safety concerns for hazard mitigation.

Plain English Informative Digest

The Centers for Disease Control and Prevention on October 25, 2002 issued the *Guidelines for Hand Hygiene in Health-Care Settings,* which highly recommends the placement of alcohol-based hand-rub solutions in convenient locations of patient care areas of health care organizations. Clinical studies indicate that the frequency of hand washing or antiseptic hand washing by personnel is affected by the accessibility of hand-hygiene facilities. By permitting the installation of hand-rub dispensers immediately outside the patient/residence bedroom or within suites of rooms, the overall efficacy of staff use has been proven to increase by over 20 percent. According to the CDC more than 88,000 patient deaths per year are attributed to hospital-acquired infections, and one of the principal methodologies for reducing this statistic is by the expanding use of alcohol-based hand-rub solutions. These products have been found to be more effective for standard handwashing or hand antisepsis by health care workers than soap or antimicrobial soaps.

To address the fire hazard of introducing additional alcohol-based materials, a fire-modeling project was initiated to study the overall effects of placing dispensers in corridors and suites of rooms. This modeling was accomplished using the Fire Dynamics Simulator (FDS) Version 3.1 published by the National Institute of Standards and Technology (NIST). Using the results of the FDS model, the potential hazards were evaluated by reviewing the data for tenability of the space, ignition of the adjacent fuel loads/ combustibles, and sprinkler activation.

The tenability value for this report was chosen to be conservative. The fire modeling does clearly show that up to 0.32-gal container size in a corridor and up to a 0.53-gal container sized in a suite location to be acceptable for either Ethyl; or Isopropyl Alcohol-based products. Except for a scenario that modeled the 0.32-gal Isopropyl Alcohol container in a 72-inch wide corridor with all doors closed, all of the results with realistic conditions showed no issues. For that one scenario, the visibility did drop below the stated threshold, but since visibility is not an immediate health concern and it did not occur until the very end of the fire's burn time (final 15 seconds) only to improve dramatically to twice the allowable

value, were feel that this is still an acceptable result. The scenario with 72-inch wide corridors and all doors closed, which is a very extreme case compared to actual conditions, does show some concerns compared to our tenability criteria. The results show that the corridor remained below the visibility and CO thresholds established. The temperature in this scenario did drop below the tenability threshold (which has a factor of safety of 10) but not significantly. This scenario helps to prove that the hazard is acceptable.

The results clearly indicate that the 0.53-gal. container size to be unacceptable in a corridor location. In addition, the results also indicate the scenario with a carpeted floor is a concern due to visibility problems. The scenario showed that the visibility in the corridor dropped slightly below the assigned threshold. The carpet scenario is based on assumptions (soot and CO yields) that are not validated via any test data or other available data sources. The yields used are based on engineering judgment and need further study to make a firm recommendation.

Visibility, unlike other tenability areas (for example, temperature, toxicity), is based on a number of factors, has limited real life test data, and is very subjective. The resources available have a wide range of values that could be considered acceptable based on various factors, such as type of smoke (irritating vs. non-irritating), travel distances, familiarity with escape routes, etc.

The results showed that none of the fuel targets put into the models would ignite based on the design fire chosen. This indicates the proposed spacing to be reasonable to prevent additional fire hazards. Sprinkler activation was not predicted for most of he scenarios modeled. When the sprinklers actuated it was most often after the conditions had exceeded the tenability thresholds and typically with the larger 0.53-gal spills. Due o the lack of sprinkler activation, it is important to address the hazard from products of combustion such as smoke or CO more than the hazards from heat or the actual fire.

Additionally, on March 24th, the Centers for Medicare & Medicaid Services issued an interim final rule that will allow hospitals and other health care facilities to place alcohol-based hand-rub dispensers in exit corridors as long as certain safety precautions are met.

Comparable Federal Regulations

The rule, goes into effect May 24 following a 60-day comment period, and was published in the March 25th Federal Register. The AHA and its American Society for Healthcare Engineering have advocated for the change since 2003. The fire modeling studies mentioned above were sponsored by ASHE and demonstrate that the dispensers can be safety installed. "We applaud CMS for taking this important step, which will give health care workers greater access to the hand-rubs, improves hand hygiene and ultimately save lives," said Dale Woodin, ASHE deputy executive director.

Other Matters Prescribed by Statute

None

Local Agency/ School District Mandate

None

Cost or Savings t o any State Agency/ Local Agency/School District Requiring Reimbursement

None